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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/865,161 | 05/24/2001 | James O' Toole | CIS00-3785 | 2826 |

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EXAMINER

KLINGER, SCOTT M

ART UNIT

PAPER NUMBER

2153

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/865,161

Applicant(s)

O' TOOLE ET AL.

Examiner

Scott M. Klinger

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-21 are pending.

Priority

A claim for priority from provisional application number 60/177,985 has been made. The effective filing date for subject matter in the application is 25 January 2000.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7, 8, 10-13, 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being anticipated by Tani et al. (U.S. Patent Number 5,809,078, hereinafter "Tani") in view of Chen et al. (U.S. Patent Number 5,831,975, hereinafter "Chen").

In referring to claim 1, Tani shows substantial features of the claimed invention, including:

- Receiving a collection of data from a provider node:
"data receiving means for receiving the data stream transmitted from the transmitting node" (Tani, col. 2, lines 36-37)
- Transferring a copy of the collection of data to a child node of the transferring node in response to the step of receiving the collection of data:
"data transmitting means for reading the data stored in the storing means to be transmitted to the receiving node" (Tani, col. 2, lines 39-41)
- Storing the collection of data in a data storage after completing the step of transferring the copy of the collection of data.

“storing means for temporarily storing data of the received data stream” (Tani, col. 2, lines 37-39)

Storing the collection of data after completing the step of transferring the data is inherently implied in a child node that receives data

However, Tani is silent as to the topology of the network. Tani does not explicitly show a hierarchical network of nodes. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Tani as evidenced by Chen.

In analogous art, Chen discloses a system and method for hierarchical multicast routing in ATM networks. Chen shows: *“The communications network includes a plurality of nodes coupled to one another by links and comprises the steps of: dividing the communications network into a hierarchical arrangement of peer groups, wherein a peer group includes at least one of the nodes therein; building a multicast tree for a multicast group which includes all participant nodes, wherein a participant node is either a sender or receiver of data for the multicast group.”* (Chen, col. 7, lines 6-14)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Tani so as to operate on a network of hierarchical nodes, such as taught by Chen, in order to operate on a network that supports efficient multicasting.

In referring to claims 2 and 12 Tani in view of Chen shows substantial features of the claimed invention, including:

- The system of claims 1 and 11
- The step of receiving the collection of data comprises receiving the stream of packets in a buffer:

“the storing means includes primary buffer means, having a high-speed memory, for temporarily storing data of the data stream” (Tani, col. 2, lines 41-43)

- The step of transferring the copy of the collection of data comprises propagating the stream of packets from the buffer to descendent nodes of the transferring node for access by a first client making a first request for the collection of data from the descendent node:

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Tani, col. 2, lines 39-41 (see full quote above)

- Storing the collection of data comprises transferring the stream of packets from the buffer to the data storage in the transferring node

Tani, col. 2, lines 37-39 (see full quote above)

However, Tani in view of Chen only discusses the operation of one relay node and does not explicitly show enabling access to the collection of data by a second client making a second request for the collection of data. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Tani in view of Chen.

The system of Tani in view of Chen does not show denying access to the collection of data to other clients, the access would be enabled by default. It would be obvious to retransmit the buffered data rather than re-requesting the data from the provider node, re-buffering it and then relaying it. A person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Tani in view of Chen so as to allow a second client to access the collection of data, in order to take advantage of the buffered data.

In referring to claim 3, Tani in view of Chen shows,

- Transferring copies of the collection of data to each of the plurality of child nodes:
“In one embodiment of the invention, a method is set forth for multicasting cells in a communications network.” (Chen, col. 7, lines 5-6)

In referring to claim 7, Tani in view of Chen shows,

- The step of transferring the copy of the collection of data comprises transferring the copy of the collection of data between the provider node and the child node through the transferring node in a delayed timing mode:
“A short-delay time relay processing can be realized” (Tani, col. 3, lines 8-9)

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In referring to claim 8, Tani in view of Chen shows,

- The step of storing the collection of data comprises retaining the collection of data after confirming the receipt of the copy of the collection of data by the child node:

The system of Tani does not mention removing data from the buffer

In referring to claim 10, Tani in view of Chen shows,

- Maintaining a connection among the network of nodes in order to transfer the collection of data:

A system that transfers a collection of data among a network of nodes inherently implies maintaining a connection among said network of nodes

In referring to claim 11, Tani shows substantial features of the claimed invention, including:

- A memory; a data storage; a network interface in communication with the memory and the data storage; and a processor in communication with the memory, the data storage, and the network interface:

"The processing functions of the respective sections of the relay node of FIG. 2, that is, the data receiving section 12, the data transmitting section 13, the node management section 14, and the data transfer section 113 can be realized as follows. Specifically, the recording medium (memory card, floppy disk, CD-ROM, etc.) in which a program for realizing the above processing functions by the data processor such as a computer having a CPU is used. Then, the recording medium is mounted on the data processor to read the program recorded in the recording medium." (Tani, col. 15, lines 30-39)

- Receiving a collection of data from a provider node:
Tani, col. 2, lines 36-37 (see full quote above)
- Transferring a copy of the collection of data to a child node of the transferring node in response to the step of receiving the collection of data:
Tani, col. 2, lines 39-41 (see full quote above)
- Storing the collection of data in a data storage after completing the transferring of the copy of the collection of data:

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Tani, col. 2, lines 37-39 (see full quote above)

However, Tani is silent as to the topology of the network. Tani does not explicitly show a hierarchical network of nodes. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Tani as evidenced by Chen.

In analogous art, Chen discloses a system and method for hierarchical multicast routing in ATM networks. Chen shows: *Chen, col. 7, lines 6-14* (see full quote above)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Tani so as to operate on a network of hierarchical nodes, such as taught by Chen, in order to operate on a network that supports efficient multicasting.

In referring to claim 13, Tani in view of Chen shows,

- Transferring copies of the collection of data to each of the plurality of child nodes:

Chen, col. 7, lines 5-6 (see full quote above)

In referring to claim 17, Tani in view of Chen shows,

- The data manager performs an operation of transferring the copy of the collection of data between the provider node and the child node through the transferring node in a delayed timing mode:

Tani, col. 3, lines 8-9 (see full quote above)

In referring to claim 18, Tani in view of Chen shows,

- The data manager performs an operation of retaining the collection of data after confirming the receipt of the copy of the collection of data by the child node:

The system of Tani does not mention removing data from the buffer

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In referring to claim 20, Tani shows substantial features of the claimed invention, including:

- Receiving a collection of data from a provider node:
Tani, col. 2, lines 36-37 (see full quote above)
- Transferring a copy of the collection of data to a child node of the transferring node in response to the step of receiving the collection of data:
Tani, col. 2, lines 39-41 (see full quote above)
- Storing the collection of data in a data storage after completing the step of transferring the copy of the collection of data:
Tani, col. 2, lines 37-39 (see full quote above)

However, Tani is silent as to the topology of the network. Tani does not explicitly show a hierarchical network of nodes. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Tani as evidenced by Chen.

In analogous art, Chen discloses a system and method for hierarchical multicast routing in ATM networks. Chen shows: *Chen, col. 7, lines 6-14* (see full quote above)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Tani so as to operate on a network of hierarchical nodes, such as taught by Chen, in order to operate on a network that supports efficient multicasting.

In referring to claim 21, Tani shows substantial features of the claimed invention, including:

- Means for receiving a collection of data from a provider node:
Tani, col. 2, lines 36-37 (see full quote above)
- Means for transferring a copy of the collection of data to a child node of the transferring node in response to the step of receiving the collection of data:
Tani, col. 2, lines 39-41 (see full quote above)
- Means for storing the collection of data in a data storage after completing the step of transferring the copy of the collection of data.
Tani, col. 2, lines 37-39 (see full quote above)

However, Tani is silent as to the topology of the network. Tani does not explicitly show a

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hierarchical network of nodes. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Tani as evidenced by Chen.

In analogous art, Chen discloses a system and method for hierarchical multicast routing in ATM networks. Chen shows: *Chen, col. 7, lines 6-14* (see full quote above)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Tani so as to operate on a network of hierarchical nodes, such as taught by Chen, in order to operate on a network that supports efficient multicasting.

Claims 4, 9, 14, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tani in view of Chen and in further view of Robles et al. (U.S. Patent Number 6,282,172, hereinafter "Robles"). Although Tani in view of Chen shows substantial features of the claimed invention, including the system of claims 1 and 11 (see 103 rejections above), Tani in view of Chen does not explicitly show a step of providing an acknowledgment indicating that the collection of data is complete. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Tani in view of Chen as evidenced by Robles.

In analogous art, Robles discloses generating acknowledgement signals in a data communication system. Robles shows a step of providing an acknowledgment indicating that the collection of data is complete: "*An embodiment of the invention receives a data packet from a source node for transmission across a communication medium to a destination node. The system generates an acknowledgment signal indicating receipt of the data packet at the destination node. The acknowledgment signal is generated before completing transmission of the data packet to the destination node. The system then transmits the acknowledgment signal to the source node.*" (Robles, col. 2, lines 50-57)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Tani in view of Chen so as to use a step of providing an acknowledgment indicating that the collection of data is complete, such as taught by Robles, in order to verify that the task was completed.

Claims 5, 6, 15, and 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tani in view of Chen and in further view of Acosta (U.S. Patent Number 6,496,520, hereinafter "Acosta"). Although Tani in view of Chen shows substantial features of the claimed invention, including the system of claims 1 and 11 (see 103 rejections above), Tani in view of Chen does not show receiving an indication for retransmission of one or more packets. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Tani in view of Chen as evidenced by Acosta.

In analogous art, Acosta discloses a wireless network system and method. Acosta shows receiving an indication from the child node that the copy of the collection of data received by the child node is incomplete; and transferring copies of at least one packet of data to the child node to complete the copy of the collection of data received by the child node: *"FIG. 6 is a block diagram of a retransmit request message packet 50 sent by a receiving device 52 in response to an incomplete payload 30 (shown in FIG. 4) reception, when the header packet 41 of the particular payload 30 has been received by the receiving device 52 but other data packets 40 have not been so received."* (Acosta, col. 5, lines 56-61)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Tani in view of Chen so as to provide a means for retransmission of packets, such as taught by Acosta, in order to improve communications over low bandwidth, poor quality channels.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (703) 305-8285. The examiner can normally be reached on M-F 7:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott M. Klinger
Examiner
Art Unit 2153

smk

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